

# DESERT

PLANT LIFE

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**MACHAEROCEREUS GUMMOSUS**  
**THE DAGGER CACTUS**

**DUDLEYA FORMOSA, A NEW**  
**SPECIES FROM NORTHERN**  
**BAJA CALIFORNIA**

*Reid Moran*

**GUERRERO IS MY DESTINATION**

*Fritz Schwarz*

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*Mexican Special Number*

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CEREUS GUMMOSUS Engelmann 1889

LEMAIREOCEREUS GUMMOSUS Br. & R. 1909

MACHAEROCEREUS GUMMOSUS Br. & R. 1920

A cactus fairly common, distributed over the mainland and adjacent islands of Lower California, at times in association with *Pachycereus Pringlei* and *Lophocereus Schottii*.

In size however, *Machaerocereus gummosus* offers considerable contrast to its sturdy companions, attaining a height of little more than three feet. In its growth habits it differs still more from tree types, presenting as it does an irregular, bushy appearance, the branches spreading, horizontally, or prostrate. Because of this tendency Schumann established the series PROSTRATI including in it *Machero. eruca* another of the "dagger" group.

Stem 4-6 cm. thick, usually with 8 ribs, dark or gray-green. Sinuous and blunt.

Radial spines 8-12; central spines 3-6 flattened; lower up to 4 cm. directed downward. It is this last dagger shaped spine which gave the genus name machaer Greek, a saber or dagger.

Long, slender, diurnal flowers are variously described as purple, red, scarlet-red, cream in color.

Red, fleshy fruit with spines dropping off later, as it ripens in September or October.

Seedlings are very different from the parent plant and retain this appearance for some time, giving nurseryman so disposed, opportunity to sell them under another name, possibly *Cereus flexuosus*.

The plant contains a strong alkaloid or saponin destructive, when taken internally, to red corpuscles of animal bodies. Used to poison fish. Inner stem tissues crushed to pulp, when they become a hardened gummy mass, are mixed with oil and utilized as calking of boats. Full of gum as indicated by the specific name.

Natives cultivate the plant for its "pitahaya agria" (sour fruit).

*Machaerocereus gummosus* is not recommended as a garden specimen; it is hardly an attractive plant; is not amenable to ordinary cultural care; does not do well as a greenhouse subject and will not flower.

So while this cactus does not like our way of life and defends itself against any familiarity in natural surroundings it has exacted its tribute of interest from those who have made its acquaintance.



MACHAEROCEREUS GUMMOSUS

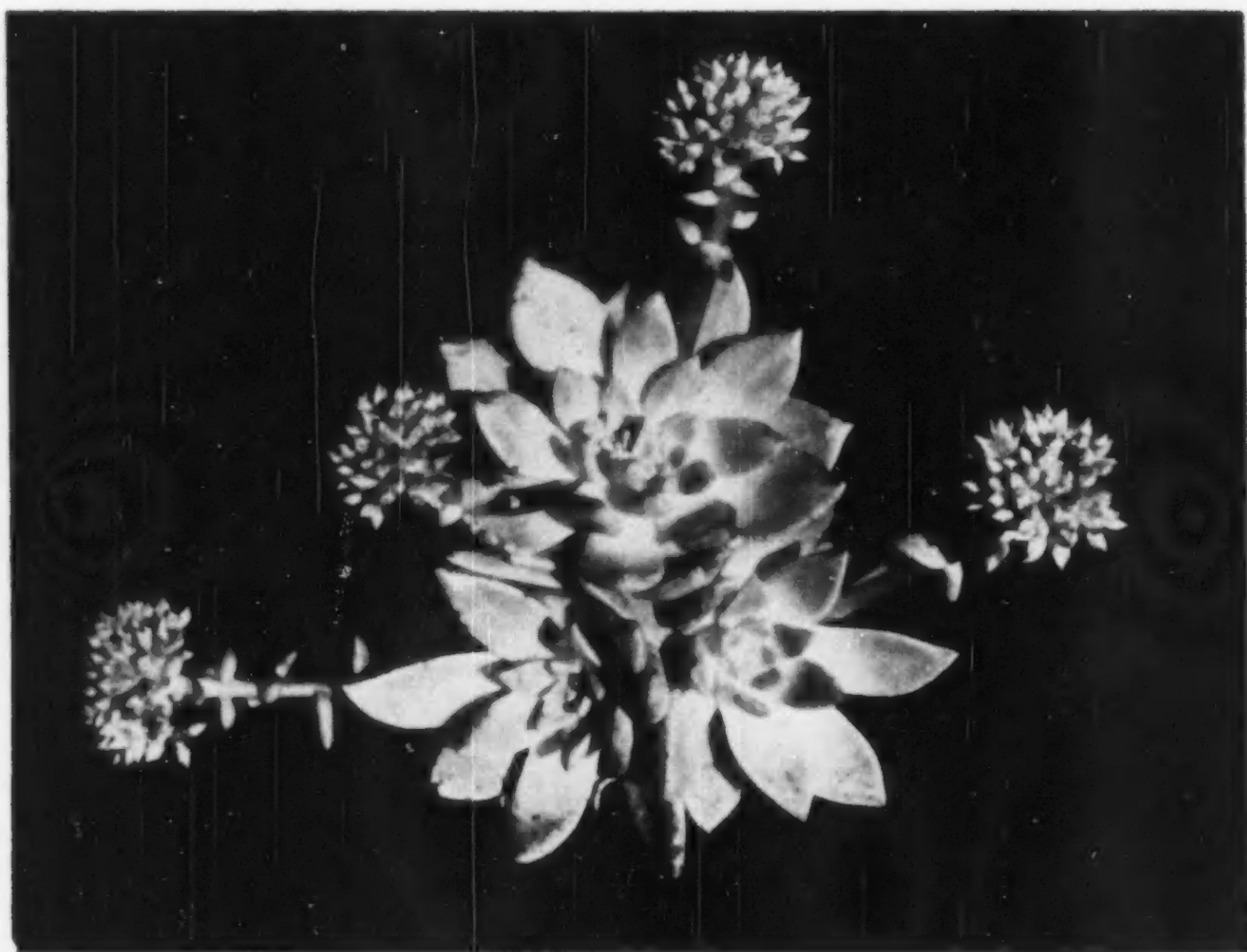


## DUDLEYA FORMOSA, A NEW SPECIES FROM NORTHERN BAJA CALIFORNIA

**Dudleya formosa** species nova.

Caudex procumbens, elongatus, multiramosus, diametro  $\frac{1}{2}$ -2 $\frac{1}{2}$  cm. Folia rosulata usitate 10-20, oblonga vel oblongo-ovata, acuta vel obtusa, 2-8 cm. longa, 1-3 cm. lata, viridia nec glauca. Rami floriferi 4-19 cm. alti, diametro 3-6 mm., foliis horizontalibus, ovatis vel lanceolatis, cordatis, acutis, eis infimis 8-21 mm. longis, 4-12 mm. latis. Inflorescentia densa, usitate hemisphaerica, diametro 2-9 cm., 3-7 ramis confertis semel vel bis furcatis constans. Cincinni usque ad 2 cm. longi, 2-6 flores ferentes. Pedicelli erecti, crassi, infimis 1-3 mm. longis, diametro 2-2 $\frac{1}{2}$  mm. Sepala triangula, acuta, 1-2 mm. longa, 2-3 mm. lata. Petala alba, rosaceo- vel rubroincta, elliptica, acuta, 8-9 mm. longa, 3-4 mm. lata, a medio erecta, superne expandentia, 1-1 $\frac{1}{2}$  mm. connata. Squamae circa 1 mm. latae. Carpella 6-7 mm. alta, anthesi separata, eis submaturis ascendentibus, eis dehiscentibus fere horizontaliter expandentibus. Styli tenues, 2-2 $\frac{1}{2}$  mm. longi.

Caudex trailing,  $\frac{1}{2}$ -2 $\frac{1}{2}$  cm. thick, becoming 5 dm. or more long, branching to form a loose prostrate cluster sometimes of several hundred rosettes. Rosettes rather flat, 4-13 cm. in diameter, with about 10-20 (-30) leaves. Rosette leaves oblong to oblong-obovate, acute to obtuse but usually with an apical mucro about  $\frac{1}{2}$  mm. long, 2-8 cm. long, 1-3 cm. wide, 3-6 mm. thick, bright green or tipped with red, not at all glaucous, convex below, flat or slightly concave above; the margins subacute; the base 10-20 mm. wide, 1-4 mm. high, or rarely on rapidly growing stems decurrent and to 10 mm. high. Floral stems red, 4-15 (-19) cm. high, 3-6 mm. thick, leafy to within 2-5 cm. of the base. Cauline leaves 10-17, rather close-set, horizontal, ovate to triangular-lanceolate, cordate, acute, the lowermost 8-21 mm. long, 4-12 mm. wide. Inflorescence pinkish, rather dense, hemispherical or somewhat flat-topped, 2-6 (-9) cm. in diameter, usually of 3-7 close-set branches that usually rebranch once or sometimes twice. Cincinni spreading or ascending, to 2 cm. long, with 2-6 flowers. Pedicels erect, stout, the lowermost 1-3 mm. long, 2-2 $\frac{1}{2}$  mm. thick. Calyx 4-5 mm. wide, 2-3 mm. high, rounded below; the segments triangular, acute, 1-2 mm. long, 2-3 mm. wide; the sinuses broad and rounded. Petals white tinged with pink, or the keel bright red, elliptic, acute, 8-9 mm. long, 3-4 mm. wide, spreading from just below the middle, connate 1-1 $\frac{1}{2}$  mm. Filaments 5-6 $\frac{1}{2}$  mm. long, adnate 1-1 $\frac{1}{2}$  mm., the epipetalous slightly shorter than the antepetalous and adnate slightly higher. Anthers red. Scales about  $\frac{1}{2}$  mm. high and 1 mm. wide. Carpels 6-7 mm. high including slender styles 2-2 $\frac{1}{2}$  mm. long, separated at anthesis, with about 30 ovules. Follicles ascending-spreading, semiovate, with a prominent lateral nerve about midway between midvein and margin, at dehiscence widespreading, the ventral margin about 5-20° above the horizontal. Seeds brown, ovoid, longitudinally striate, nearly 1 mm. long. Chromosome number:  $n=17$ .



DUDLEYA FORMOSA



JUNE, 1950

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**TYPE COLLECTION:** North-facing basaltic cliff at the mouth of the Rio Guadalupe (=Rio San Miguel), Baja California, Mexico, (near 32°05.7' N, 116° 53.0' W), May 27, 1947, *Moran 2208*. The type specimen is number 806,722 in the Herbarium of the University of California at Berkeley. Isotypes are in the following herbaria: CAS, CU, DS, NY, POM, and US.

**DISTRIBUTION:** Known only from north-facing cliffs of the Rio Guadalupe valley within three miles of its mouth. Other collections (represented in the Herbarium of the University of California): *Wylie* July 1945; *Moran 2210, 3067, 3101, 3266*.

In its leaf rosettes, *D. formosa* somewhat resembles the maritime plant of central California known as *D. compacta* Rose. However, the spreading petals and widespreading carpels of *D. formosa* distinguish it from all species of EUDUDLEYA and place it in the subgenus STYLOPHYLLUM.

*Dudleya formosa* may be distinguished from all other species of the subgenus STYLOPHYLLUM by its short broad rosette leaves. It is further distinguished by the following combination of characters: dense inflorescence, stout pedicels, small sepals, spreading pink petals, and widespreading follicles. In *D. Traskiae* (Rose) Moran the rosette leaves are broad, but they are more numerous, longer, and glaucous; and the floral stems are taller, the petals bright yellow and less spreading, and the follicles less spreading. In *D. virens* (Rose) Moran the leaves may be broad relative to their thickness, but they are longer than in *D. formosa* relative to their breadth; and the inflorescence is more open, the sepals larger, the petals white, and the follicles longer and less spreading. In *D. densiflora* (Rose) Moran the follicles may be widespreading, the inflorescence relatively dense, and the petals pinkish; but the rosette leaves are more numerous, longer, subterete, and glaucous, the floral stems taller, the pedicels longer and more slender, and the anthers yellow. *Dudleya semiteres* (Rose) Moran has longer and narrower leaves, a fewer-branched and more open inflorescence, and more erect petals and follicles. *Dudleya edulis* (Nuttall) Moran has terete leaves, a very open inflorescence, larger sepals, and narrower white petals. *Dudleya viscida* (Watson) Moran differs in its more numerous, longer, narrower, and viscid rosette leaves, taller floral stems, and longer and less spreading follicles. *Dudleya anomala* (Davidson) Moran has narrow viscid leaves, a more open inflorescence, longer pedicels, and less spreading petals and follicles. In *D. stolonifera* Moran, which stands close to STYLOPHYLLUM, the rosette leaves are broad like those of *D. formosa*, but branching is by stolons, the inflorescence is more open, the pedicels are longer and more slender, the petals yellow and erect, and the follicles less spreading.

Dr. Charles H. Uhl of Cornell University has studied material of the type collection and of two other collections (3067, 3266) from nearby localities. He reports a haploid number of 17 chromosomes.

This species was first called to my attention by Mrs. Ethel Bailey Higgins of the San Diego Museum of Natural History, who sent a specimen collected in July 1945 by Mr. Fred Wylie.

*Dudleya formosa*, with its bright green leaves, red floral stems, and pink flowers, makes an attractive plant for the rock garden. It has been grown successfully for several years at Lakeside, California, by Mr. Paul V. Ferguson.



FRITZ SCHWARZ  
San Luis Potosi  
Mexico

## GUERRERO IS MY DESTINATION

Finally I had reached the summit of the mountain range. Exhausted and bathed in perspiration I settled down to rest.

From here I can see far in the distance—an eagle high in the heavens I imagine myself. A singular and stirring aspect—below, the bare foothills intermingled by dark, shadowy flecks. Only indistinctly I can recognize my former camping site, which in past months has been my home.

Beyond that the desert extends to indefinite horizons. There Don Manuel is driving the burros which are carrying my baggage to the small railroad station.

In vain my burning eyes search in the distance for some sign of motion. The next moment the desert has disappeared. Nothing more is to be seen, except the flickering heat-waves over the shimmering earth.

Ah—alone once more—A last glance at the glistening foothills there below—but I must be going on my way. Likewise Tieger, my dog arises. Certainly he must remember how several months ago, almost lifeless from hunger, he came to my camp.

Ah—Tieger we were happy there—not so? He snuggles his nose for answer in my hand and softly whines.

The descent is easy enough, but after that it is up hill, down dale till nightfall. Here too on the other side of the Sierra the desert stretches out, indistinct, hazy, in the reddish luster of the setting sun. Soon my campfire flickers out in the fast approaching twilight. And then the enveloping stillness. The night stillness. Solitude. Wilderness.

Next morning, between bare rocks on the slopes, I gather the dainty *Mammillaria denudata*, a small plant tinged overall a shining rose. Content, with hardly any moisture, it grows here in the meagre earth, between shading rock-clefts.

In full sun on the hillsides, I find in addition *Mammillaria lenta* in groups, but I take only a few, for I have still a long way to go along the road on the other side of the desert; and I have to carry the food and the water bag. I see several specimens of beautifully grown *Peniocereus Greggii* hidden under the sparse shrubbery. Naturally under afore mentioned conditions I am unable to take them with me. But with most cacti it is the approach of extinction. Unless rains arrive soon they will not be able to withstand the increase in glowing heat.

Here at the desert's edge are vast stretches, overgrown with *Opuntia macrocalyx*. Limp are the joints and the brown glochids are covered with a grayish-white alkali dust. Here and there I notice great clumps of *Gru-sonia cereiformis*. Unusually sound and fresh they all seem to be. In grotesque attitudes they stretch out their branches against the torrid atmosphere as if they desired its heat.

Anyway there exists a certain defiance in the aspect of these cacti, a warning. A last desert' warning, threatens. Ominous surmisings greet me. Instinctively I feel it, my skin is suddenly and peculiarly susceptible. Then all further thought is absolved in the heaven's heat. Hours lengthen into eternity—merging into monotonous torment.

Suddenly it is night. The sun becomes suddenly immersed in a red haze. It is not a color-play as usual. It is depressing—an echo from the past—a premonition—a menace.

In the early morning hours we reach Camino Real, which leads on nearby. We do not need to wait long. A delivery truck rumbles along. The driver stops and takes us along. Late at night we finally land in Saltillo.

Next morning at the Post Office I read my mail. Hm—We are needing plants from the state of Guerrero. I am to proceed. Here in Saltillo I had left my Ford several months ago. I have it serviced—and then begins the long tiresome journey.

Two weeks later we are in Guerrero. Enroute Tieger proved in all his qualities my inseparable friend and companion. Never would I have been able to have undertaken the long journey without him. Some 8 kilometers from Puente de Mescala, in a sheltered spot we struck camp. The night is damp, warm, unending mosquito swarms disturb our sleep. Even Tieger is very restless and often I hear him, half asleep, give out his warning growl.

The next morning I leave Tieger in charge of the truck. I depart to collect the required cacti.

Even though the country is very dry, for it certainly has not rained here for some time there is a noticeable change in the vegetation, almost tropical in fact, aside from that is added proof from the immense swarms of flies and thousands of insects arising from the earth.

By nightfall I had gathered the required quantities of *Mammillaria balsasensis*. It grows plentifully here, in small colonies in the shade of shrubs at the lower altitudes. *Coryphantha bumamma* also grows here in abundances. In the scorching sun it covers entire hills. Not seldom did I find specimens eight inches in diameter with strong picket shaped roots up to 12 inches that are nourished in the compact, stony earth.

Four trips I made to the truck, plant laden. Each time Tieger at his post, coming to meet me joyfully, dog fashion.

In all respects he excelled, as protector, as hunting dog, as companion. And as for his devotion and fidelity there are no words.

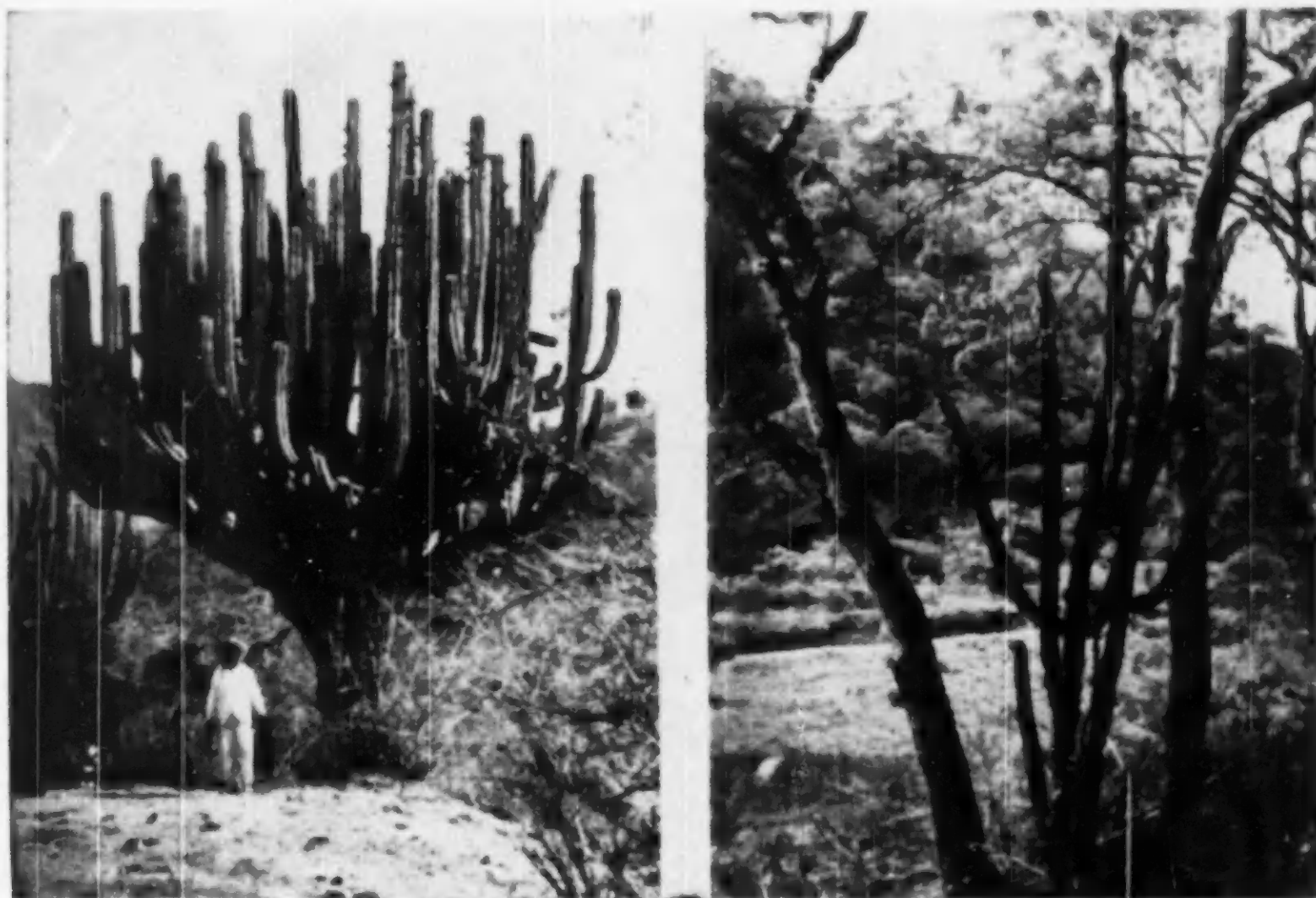
His warning growls during the night disquieted me. Would I need to seek another camping site further up the stream? When morning came all was quiet again and I decided to remain.

It was on this day that I had been able to collect a half hundred of the desirable sprouts of *Pilocereus alensis*, brought them to camp, well packed and stowed in the auto. Only lacking are still several dozen *Mammillaria guerreronis* which grow high, in steep, almost inaccessible cliffs. In late afternoon after most difficult climbing I had everything together. Even if flyswarms and other insects drew blood profusely I am well satisfied and cheerful as I near camp. Positively this very night, even very late, I shall be able to reach Taxco. In anticipation I revel in the delicious climate, the taste of good fresh water, the soft bed in a clean hotel and such other agreeable existing conditions. Yes we shall indulge ourselves. Tieger too shall have a refreshing bath and as much meat as he can possibly eat. In this contented mood I near camp.

Instantly an inexplicable foreboding seizes me. Something has happened. I don't know what—but somehow I feel it. I put down my plant-pack. I call Tieger! I listen. No response. I run till I reach camp.

Ah—how terrible! Tieger is lying dead in a pool of blood. An evil





LEMAIREOCEREUS WEBERI

PILOCEREUS ALENSIS

moment. What has happened? I know. Just a common robbery. All my belongings have disappeared, even my food.

Then I recollect of having seen two Indians with their burro several hours previously along the stream on a mountain path, while I was gathering plants 15 meters above. I had noticed them for one sat on the burro moaning, the other leading, wore blood soaked clothing. The Indian on the burro was holding a large pack in front of him. My impression had been they had met with some accident.

Now it came to me who the two Indians had been. They, while engaged in the robbery, had had to struggle with Tieger. One man he could easily have dispatched but two were an unequal match.

This last happening, the unending loneliness of the wilderness, the irritating and changing weather conditions and the insects swarms all had their effect. I became possessed. Automatically my hand reached for the revolver in the holster. From within a voice demanded revenge, justice! The next second I dash in pursuit. They must atone.

Bathed in sweat and exhausted, I halt. Long ago I should have overtaken the two Indians. Where are they? I realize that I shall not find them and make my return. Back at the camp nothing is missing except my belongings, including the provisions. The auto is intact.

Natives do not care for cacti.

I finish loading—and depart. I am on my way. An overwhelming desire possesses me—a longing for the north—the clean mountain peaks and the wide desert expanses.

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